REMARKS

This amendment is in response to the Office Action mailed July 31, 2008. Claims 1 and 13 have been amended. Claims 4-7 and 9-12 have been withdrawn. Claims 15 and 17-20 have been cancelled. Claim 21 has been added. Claims 1-3, 8, 13, 14, 16, and 21 are presently pending. No new matter has been added.

Specification

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(l) and MPEP § 608.01 (0). Correction of the following is required: "corrugated protrusions all extending in a common radial direction away from an unformed annular portion of the band" recited in claim 1, lines 3-4.

The term "outward waves 2" on page 18, line 1 has been replaced with "outwardly facing protrusions 2." Similarly, the term "waves 2" on page 18, line 17 has been replaced with "outwardly facing protrusions 2." The amendments correspond to the language used in amended claim 1. Support for the amendments is found in the specification. For example, line 17 of page 14 discusses "outwardly facing protrusions in the form of waves."

Figures 1-3 show tolerance rings having all protrusions which are all outwardly-facing or all inwardly-facing. It is also made clear in the specification on lines 18-24 of page 17 of the specification that the same reference numerals are used for corresponding parts of different embodiments. Accordingly, the Applicants respectfully request that the objection to the specification be withdrawn.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-3, 8, and 13-16, drawn to a tolerance ring.

II. Claims 4 and 5, drawn to an apparatus.

III. Claims 6, 7, 9-12, and 17-20, drawn to a method of assembling an apparatus.

Provisional election of Group I, claims 1-3, 8, and 13-16 was made with oral traverse during a telephone conversation on July 17, 2008 between the Examiner and Applicant's representative, John W. Branch. The Applicants acknowledge the election of Group I, claims 1-3, 8, and 13-16.

Claim Objections

Claim 1 was objected to because of the following informalities: regarding claim 1, "a protrusions" in line 4 should be --a protrusion-- since the article does not read correctly. Appropriate correction is required. For purposes of examining the instant invention, the examiner has assumed these corrections have been made.

Claim 1 recites "a protrusions load bearing area," *i.e.*, an area for load bearing formed by protrusions. Thus, "protrusions load bearing" describe the "area." Therefore, the indefinite article "a" refers to the "area," not the "protrusions." Accordingly, there is no informality. The Applicants respectfully request withdrawal of the objection.

§112 Rejections

Claims 1-3, 8 and 13-16 were rejected under 35 U.S.C. 1 12, first paragraph, as failing to comply with the written description requirement. Claim 1 was objected to for reciting that the projection has a load bearing area that is smaller than the unformed annular portion. Claims 2, 3, 8, and 13-16 were also objected to for depending from claim 1.

Claim 1 has been amended to recite that the protrusions form a protrusions load bearing area for contacting an outer component and the unformed annular portions form an unformed annular portion load bearing area for contacting an inner component to distribute a load from the

protrusions load bearing area over a portion of the inner component. Thus, the reference to the projection having a load bearing area that is smaller than the unformed annular portion has been removed from claim 1. Accordingly, the Applicants respectfully request withdrawal of the rejection of claim 1, as well as claims 2, 3, 8, 13, 14, and 16 which depend therefrom.

Claims 1-3, 8 and 13-16 were rejected under 35 U.S.C. 1 12, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 was objected to for reciting "corrugated protrusions" since the protrusions 2 are not themselves corrugated. Claims 2, 3, 8, and 13-16 were also objected to for depending from claim 1.

Claim 1 has been amended to remove the reference to the protrusions being "corrugated." Accordingly, the Applicants respectfully request withdrawal of the rejection of claim 1, as well as claims 2, 3, 8, 13, 14, and 16 which depend therefrom.

Claim 15 has been additionally objected to for having unclear metes and bounds. Claim 15 has been cancelled. Accordingly, the Applicants respectfully request withdrawal of the rejection of claim 15.

§102 and §103 Rejections

Claims 1, 2, 13, 14 and 16 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,981,390 to Cramer, Jr. et al. ("Cramer"). Claims 1-3, 8, 13, 14 and 16 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,838,928 to Blaurock et al. ("Blaurock"). Claims 1-3, 8 and 13-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over applicants' admitted prior art in view of Blaurock. The Applicant traverses these rejections.

Claim 1 was separately rejected as anticipated by Cramer and Blaurock. Claim 1 was also rejected as obvious over admitted prior art in view of Blaurock.

Claim 1 has been amended to recite a tolerance ring with a plurality of protrusions formed therein, all of the protrusions extending radially outwards between unformed annular portions of the band. Cramer does not teach protrusions extending radially outwards. Cramer discloses a tolerance ring with a plurality of radially inwardly projecting corrugations (Cramer, col. 4 lines 47-48). There is no teaching or suggestion in Cramer of employing outwardly facing protrusions. For at least this reason, the rejection of claim 1 over Cramer should be withdrawn.

Amended claim 1 additionally recites at least one guide surface that is contiguous with the unformed annular portion load bearing area and is inclined relative to the axis of the band in the same radial direction as the protrusions. Cramer does not teach that the guide surface is inclined in the same radial direction as the protrusions. As discussed above, Cramer discloses a tolerance ring with a plurality of radially inwardly projecting corrugations (Cramer, col. 4 lines 47-48). Cramer also discloses includes a plurality of radially outwardly projecting tabs formed along both axial ends of the ring (Cramer, col. 4, lines 61-64). Thus, the tabs project in a radial direction that is opposite to the projection of the corrugations, as recited in claim 1. For at least this additional reason, the rejection of claim 1 over Cramer should be withdrawn.

Moreover, the corrugations and tabs shown in Figure 7 of Cramer cannot be switched to project in the same radial direction. The tabs shown in Figure 7 of Cramer are designed to axially retain the tolerance ring (Cramer, Abstract). In conventional tolerance ring assemblies, the sliding contact between components occurs at the interface between the projections on the tolerance ring and whichever component the projections are to contact. In Figure 7 of Cramer, the sliding contact is between the projections and the shaft. Thus, for the embodiment shown in Figure 7 of Cramer, the tolerance ring if first mounted to the outer member and then the inner member is inserted. If the projections shown in Figure 7 of Cramer were moved to the outer surface of the tolerance ring, the tolerance ring would first need to be mounted to the inner member and then the inner member and the tolerance ring would be inserted into the outer member. The sliding contact would then be between the projections and the inside surface of the outer member. In that case, axial retention would be needed between the inner member and the tolerance ring. Such axial retention is provided by radially inwardly projecting tabs. Thus, in order for the device taught in Figure 7 of Cramer to

operate properly, the tabs and the projections need to project in opposite radial directions. Thus, the tabs do not project in the same outward radial direction, as recited in amended claim 1.

Amended claim 1 additionally recites a guide portion that flares outwards from the unformed annular portion load bearing area to facilitate alignment between the unformed annular portions and the inner component when the inner component is inserted into the unformed annular portion load bearing area.

Cramer does not teach facilitating alignment between the unformed annular portions and the inner component. Figure 7 of Cramer shows angled tabs that press against chamfered edges of the bore of the outer member to retain the tolerance ring against the outer member (Cramer col. 4 line 66 through col. 5 line 9; and Figure 7). Thus, the tabs shown in Figure 7 of Cramer do not facilitate alignment. Instead, the tabs shown in Figure 7 of Cramer press against a chamfered edge of the outer component to axially retain the tolerance ring. Thus, the tabs taught by Cramer facilitate retention of the tolerance ring to the outer member. The tabs taught by Cramer do not facilitate alignment between the unformed annular portions of the tolerance ring and the inner component, as recited in amended claim 1. For at least this additional reason, the rejection of claim 1 over Cramer should be withdrawn.

As mentioned above, amended claim 1 recites a plurality of protrusions formed along an annular band, all of the protrusions extending radially outward. Blaurock does not teach all of the protrusions extending radially outward. Blaurock discloses an annular spacer element having projections on both major surfaces (Blaurock, Abstract; and col. 1 lines 62-63). Therefore, the projections disclosed by Blaurock extend both radially inward and radially outward. Thus, the projections disclosed by Blaurock do not all extend radially outward, as recited in amended claim 1. For at least this reason, the rejection of claim 1 over Blaurock should be withdrawn.

Claim 1 also recites an unformed annular portion load bearing area for contacting an inner component to distribute a load from the protrusions load bearing area over a portion of the inner component. Blaurock does not teach an unformed annular portion load bearing area contacting an inner component. As discussed above, Blaurock discloses projections extending from both major surfaces of an annular spacer element (Blaurock, Abstract; and col. 1 lines 62-63).

Thus, the inner component of Blaurock contacts the projections extending radially inward, not the unformed annular portion load bearing area, as recited in amended claim 1. For at least this additional reason, the rejection of claim 1 over Blaurock should be withdrawn.

Moreover, Blaurock does not teach at least one guide surface that is contiguous with the unformed annular portion lead bearing area contacting the inner component. Blaurock discloses smooth conical edge portions 156 and 158 axially bounding the annular spacer element (Blaurock, col. 4 lines 29-32). The smooth conical portions 156 and 158 disclosed by Blaurock are contiguous with projections extending radially inward, projections extending radially outward, and an unformed region therebetween. However, the unformed portion of the annular spacer element that is contiguous with the guide surface is not contacting the inner component (see Figure 9 of Blaurock), as claimed in amended claim 1. In Blaurock, only the projections extending radially inward contact the inner member.

Blaurock does not teach at least one guide surface for facilitating alignment between the unformed annular portions and the inner component when the inner component is inserted into the unformed annular portion load bearing area. As discussed above, Blaurock does not teach unformed annular portions contacting the inner component. Instead, Blaurock teaches the inner component contacting the projections that extend radially inward. Thus, the smooth conical portions 156 and 158 disclosed by Blaurock do not facilitate alignment between the unformed annular portions and the inner component, as recited in amended claim 1.

Accordingly, Cramer and Blaurock, alone or in combination, do not teach or suggest all of the elements of claim 1. For at least these reasons, claim 1, as well as claims 2, 3, 8, 13, 14, and 16 which depend therefrom, are patentable over the cited references. The Applicant respectfully requests withdrawal of the rejections of these claims.

The Office Action states that it would have been obvious to one of skill in the art to provide the tolerance ring of the prior art with the guide portion taught by Blaurock (Office Action, page 12). As discussed above, however, Blaurock does not disclose a guide surface as recited in amended claim 1. Additionally, Blaurock does not teach that the guide surface facilitates alignment

between the unformed annular portions and the inner component when the inner component is inserted into the unformed annular portion load bearing area. Accordingly, the combination of the prior art and the guide portion taught by Blaurock do not teach all of the elements of claim 1.

Additionally, Blaurock does not implicitly teach that the function of the guide surface is to facilitate alignment between the unformed annular portions and the inner component when the inner component is inserted into the unformed annular portion load bearing area. The Office Action states that Blaurock does not explicitly state the reason for the guide surface and that, therefore, the reason must be to facilitate insertion of the inner member (Office Action , page 12). Blaurock, however, discloses that the spacer element is mounted in a groove 148 formed in the outer member and that it is preferred, when the spacer element is mounted in the groove 148, that the spacer element have conical edges (Blaurock, col. 9 lines 32-64; and Figure 9).

Moreover, Figure 7 of Blaurock shows that the unformed regions 142 of the spacer element, when disposed in the groove, are inset from the plane of the surface of the outer member. During assembly of the apparatus taught by Blaurock, the inner component must be aligned with the outer member. Thus, there is already alignment between the inner component and the unformed region before the inner component even contacts the spacer element. Accordingly, one of skill in the arts would not deduce that the conical surfaces taught by Blaurock facilitate alignment between the inner component and the unformed annular portions, as taught by amended claim 1.

Accordingly, the admitted prior art and Blaurock, alone or in combination, do not teach or suggest all of the elements of claim 1. For at least these additional reasons, claim 1, and claims 2, 3, 8, and 13-16 which depend therefrom, are patentable over the cited references. The Applicant respectfully requests withdrawal of the rejections of these claims.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner has any questions or concerns, the Applicant encourages the Examiner to contact the Applicant's representative, Patrick Turner, by telephone to discuss the matter.

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Respectfully submitted,

By _____

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